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February 26, 2023

RE: S.B. No. 979 AN ACT PROMOTING ENERGY AFFORDABILITY, ENERGY EFFICIENCY, AND GREEN CITIES.

On behalf of the Connecticut Green Building Council (CTGBC) Board of Directors, we write today to express our strong support.

Section 2: Renter Energy Transparency - Bulleted Summary (See more detail later)
Energy transparency is critical for consumer protection, housing security, environmental justice, encouraging and valuing energy efficiency investments, reducing energy and healthcare costs, increasing health and comfort, and meeting the state's weatherization and climate goals.

- We support the DEEP-led process to develop the labels.
- We support the requirement that landlords share the energy label on online rental listings, but we recommend that the burden to disclose the energy label should fall to the landlord – not on the tenant to request. Consider requiring disclosure upon receipt of rental application.
- We recommend eliminating the phasing in by energy burden.
- We recommend statewide implementation and enforcement.
- We support the exemption for units that include utilities, since renters know those costs up front.
- We recommend eliminating exceptions for buildings built after 2000 and owner-occupied rentals.
- We recommend including a budget for initial and ongoing public education and outreach.

Section 4: Municipal Stretch Code - Bulleted Summary (See more detail later)
A voluntary building stretch code gives municipalities an important tool to transform their building stock toward meeting climate goals, reducing air pollution, and increasing energy affordability. A well implemented stretch code is a necessary and a significant step to achieve a healthy and equitable built environment in Connecticut.

- We strongly recommend including a process for development, education, interpretation, and enforcement - The development of a statewide stretch code should be managed by the Office of the State Building Inspector (OSBI) and the Codes and Standards Committee including opportunity for public comment.
- We strongly support Energy Efficiency Targets. (Building Envelope Insulation, Airtightness, and Equipment)
- We recommend including preference for electrification.
- We recommend removing renewable energy as a requirement.
- We recommend including embodied carbon reduction of building materials and construction.
- We recommend aligning stretch code measures with State affordable housing and energy-efficient incentive programs to streamline projects' ability to offset additional costs.
- We recommend identifying alternate compliance paths such as Passive House, LEED Gold, or Living Building Certifications to streamline compliance and enforcement.
- We recommend including municipal adoption incentives.
- We recommend including a budget for education for contractors, architects, and other building professionals, training for local code officials, and enforcement.

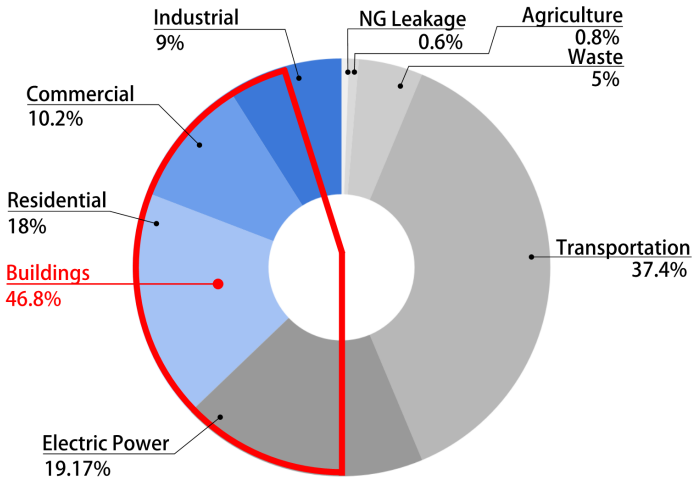
Sections 5+6: Contractor Education and Licensing

Heat pump technology has huge potential to decarbonize our built environment and reduce local air pollution, but the technology is new and to be effective training is needed for successful installations that have the impact we hope to achieve.

- We strongly support requiring education and training on heat pumps for building trades.
- We recommend including adjustments to the building trade licensing and apprenticeship requirements to increase the workforce to transition to a clean energy economy.

The CT Green Building Council is encouraged to see the unprecedented amount of legislation this year that addresses building energy efficiency. Because we spend the vast majority of our lives inside buildings, they have an outsized impact on our finances, health, comfort, and on the state's ability to achieve its climate goals.

Buildings have the largest carbon footprint of any other sector in Connecticut.



Estimated greenhouse gas emissions in Connecticut from buildings[1]

Onsite building emissions account for 32.7% of Connecticut's greenhouse gas (GHG) emissions and buildings nationally consume approximately 74% of electrical power generation, making buildings ultimately responsible for a total of 46.8% of Connecticut's GHG emissions. To meet our state's climate goals, it is critical to increase the energy efficiency of our building stock.

Building Energy Efficiency Addresses Environmental Justice

Those who contribute the least to global greenhouse gas emissions are the most affected. Disadvantaged communities and communities of color bear the disproportionate effects of climate change, living in flood prone areas, or next to power plants and waste transfer facilities that create harmful pollution that cause negative health consequences. Reducing fossil fuel powered electricity by 15% nationally would save more than six lives every day.[2] Energy efficiency prevents the 4 largest health killers by reducing air pollution: cancer, chronic lower respiratory diseases, heart disease, and stroke. It is

[1] 2018 Connecticut Greenhouse Gas Inventory, DEEP Office of Climate Change, Technology and Research, 2019, Energy Consumption by Sector, Energy Information Administration

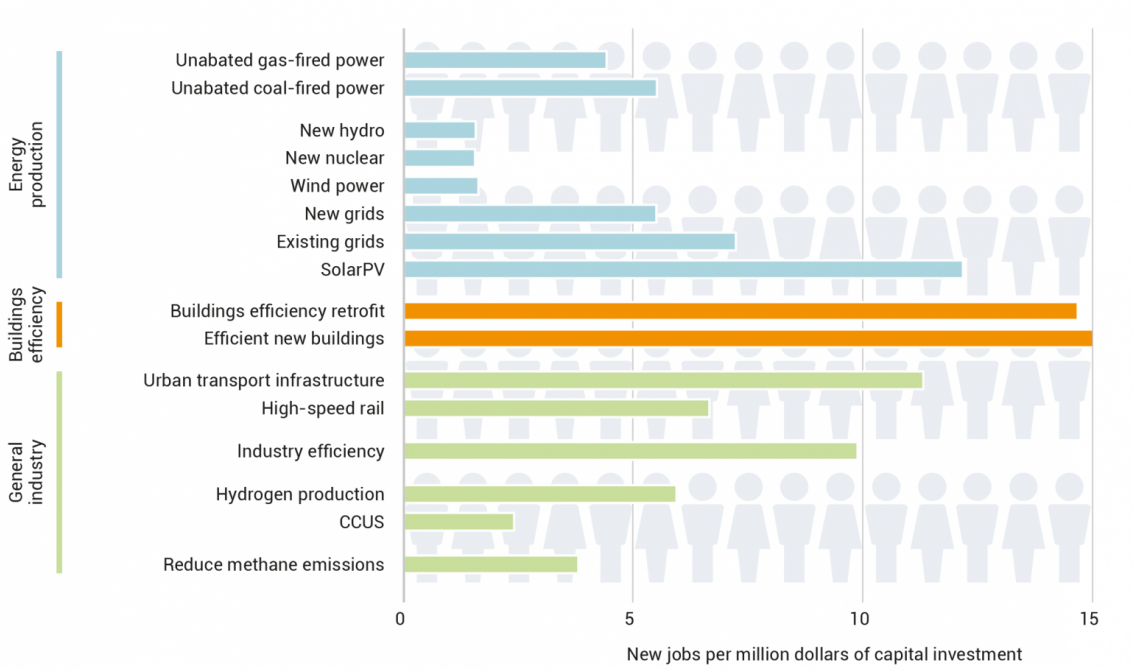
[2] 2018 Saving Energy, Saving Lives, American Council for an Energy-Efficient Economy

estimated that 40% of diagnosed asthma is associated with home exposures.[3] Environmental Justice Communities are typically dense residential neighborhoods, and burning fossil fuels onsite makes these neighborhoods effectively into power plants that produce dirtier air pollution right in the location where people spend most of their time.

> ***Dense residential communities are effectively power plants that produce dirtier air pollution right where people spend most of their time. Energy efficiency and electrification reduce this exposure.***

Building Energy-Efficiency Positions our State for Economic Development

Buildings that are designed to a higher energy standard have a higher resale value,[4] attract more talent,[5] and save money for the most impoverished and energy burdened populations.[6] Since Connecticut has the highest total energy costs in the nation according to some metrics,[7] and surrounding states like New York, Massachusetts, New Hampshire, and Vermont are already implementing stretch codes, the combination of stretch codes and energy transparency will be important for the state to attract, maintain, and respond to the needs of residents and businesses alike.[8] In 2021, energy efficiency programs supported 34,000 clean energy jobs in Connecticut. Investments in the energy efficiency workforce bring the highest return on investment of any green job. In order to meet CT's goal of weatherizing 80% of residential units by 2030, E4 The Future estimates we need 18,600 more energy efficiency jobs.[9] This is a unique opportunity to train and employ those in disadvantaged communities who are feeling the most devastating impacts of climate change.



[3] 2020, Addressing Health & Safety Barriers in CT, Energy Efficiency for All

[4] 2018, New Research Shows the Myriad Benefits of Energy Efficient Homes, Midwest Energy Efficiency Alliance

[5] 2019, How Do Green Buildings Attract, Engage, & Retain Talent?, Clean Technica

[6] 2020, CT's Energy and Transportation Costs are Unaffordable for Many Households, Especially the Most Vulnerable, Operation Fuel

[7] 2020, Most & Least Energy-Expensive States, Wallet Hub

[8] 2017, Community | Energy Vision: Action Guide for Connecticut, Acadia Center

[9] 2021, Energy Efficient Jobs in Connecticut, E4 The Future

Source: IEA (2020g). All rights reserved. Adapted from "IEA Sustainable Recovery, 2020" [10]

Section 2: Renter Energy Transparency

We encourage you to watch this webinar we hosted with People's Action for Clean Energy (PACE) that provides an overview of energy transparency and examples from other jurisdictions.
Energy Transparency: Using Home Energy Labels to Make Smarter Decisions

There is a strong coalition in support of energy transparency including the City of New Haven, Conservation Law Foundation, CT Green Building Council, CT Roundtable for Climate and Jobs, Neighborhood Housing Services of New Haven, Operation Fuel, People's Action for Clean Energy (PACE), Sierra Club. Please refer to this fact sheet for more information.

Energy Transparency is Basic Consumer Protection

Tenants should be able to make informed decisions about where to live. Providing an energy label is basic consumer protection given the high level of energy burden in our state.[11] Even experts can end up in these unfortunate situations. One of our members shared that she recently moved into a 2-bedroom 600 square foot apartment and last month received an electric bill for $1100. She would have second guessed her decision to move in had she been aware of the cost of utility bills. Tenants don't necessarily know the different costs associated with different heating systems and fuels. If they are viewing the house in the summer they don't know how drafty it will be in the winter, and they can't see the amount of insulation in the walls. An energy label would make them more aware of how the building's infrastructure affects their comfort and wallets, and although labels do not require it, over time they will encourage more energy-efficiency investments by property owners.

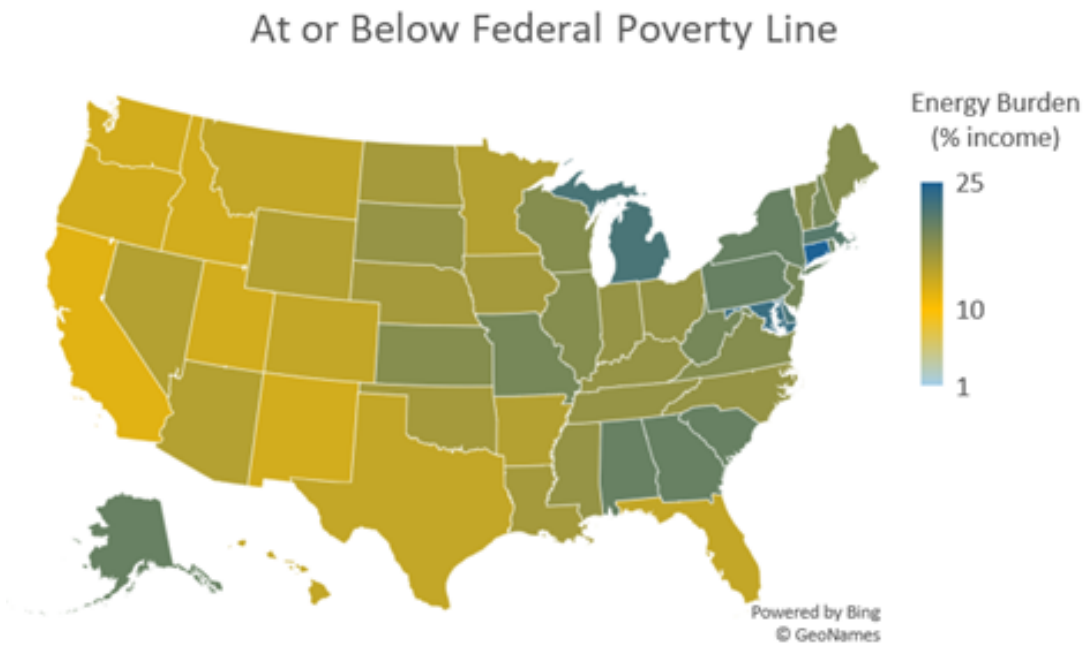
Energy Transparency Addresses Environmental Justice and Increases Housing Security

Requiring housing energy transparency and disclosure protects vulnerable communities that are disproportionately impacted by energy burden. We are in an affordable housing crisis, and high electric and gas bills are making the crisis worse. Connecticut's low-income community has one of the highest energy burdens in the nation.[12]

[10] 2020, Global Status Report for Buildings and Construction, Global Alliance for Buildings and Construction.

[11] 2020, Mapping Household Energy and Transportation Affordability in Connecticut, VEIC; 2022, Energy Justice And Health In A Changing Climate, Yale School of Public Health; 2022, Energy Burden in Hartford, Trinity College Liberal Arts Action Lab

[12] 2019, 6 Maps That Show How Bad Energy Poverty Is and Reveal 2 Ways to Make it Better, Union of Concerned Scientists



The physical attributes of a home that impact energy cost also directly tie to occupant health such as adequate ventilation, moisture, and thermal comfort. A highly efficient home is more likely to be a healthier home.[13] Energy transparency promotes housing security by giving tenants more information about their total anticipated home budget. Energy transparency for home sales has been shown to reduce mortgage default rates.[14] The other benefits to the state of increased energy-efficiency are reduced need for energy assistance, creating and sustaining high quality jobs, reduced health care impacts, and reduced greenhouse gas emissions to meet our state's climate targets.

Energy Transparency Encourages Energy Efficiency Investments

Importantly, energy transparency is a requirement for a disclosure of energy efficiency, not energy efficiency investments. Over time it will encourage more energy-efficiency investments by property owners, as has been documented in other jurisdictions where energy transparency has been implemented, such as the European Union, Austin, TX,[15] and Portland, OR. This is a market-driven approach to increase the quality of Connecticut's housing stock. In fact, presently the value of energy efficiency is not captured in real estate transactions because it is hard to make equivalent comparisons without available data. Energy transparency can allow proper market valuation so that property owners can recover the investments made in energy efficiency.

Along with an energy label, information could be distributed about the many programs available that provide incentives and rebates for energy-efficiency work , including, but not limited to, the federal Weatherization Assistance Program, Energize CT Home Energy Solutions, the CT Green Bank Smart E-Loans, Residential Energy Preparation Services, and the soon-to-be-offered Connecticut Affordable Housing Energy Efficiency Retrofit Grant Program as a result of Public Act 21-48, and the many tax credits and programs as a result of Inflation Reduction Act.

Energy Transparency Implementation can be Flexible

There are many different options for how to estimate annual energy costs. You can evaluate historic energy usage, or the physical properties of the home itself, using property appraisal data or a more

[13] 2018, Energy Efficiency Saves Lives, Avoids Huge Health Costs, NRDC
[14] 2022, How Does Home Energy Score Affect Home Value and Mortgage Performance?, Lawrence Berkeley National Laboratory
[15] 2019, Effects of Mandatory Energy Efficiency Disclosure in Housing Markets; Puller, Myers, West

accurate in-person audit. Both a Home Energy Score and a HERS Rating are based on the physical attributes of the home that contribute to energy efficiency: insulation, air-tightness, and equipment efficiency. Because people use energy differently, it is very useful to understand the energy demands of a home, based on its physical attributes over which the tenants do not have agency over. CT is a leader in providing Home Energy Scores through the Energize CT Home Energy Solutions program. A home energy audit is free to the income-eligible and just $50 for everyone else. We anticipate that the process led by DEEP to develop a standardized label will accommodate a variety of different transparency data sources to streamline the process to make the process easy for property owners and for quick and broad implementation.

Energy Transparency is Critical for Achieving the State's Legislated Weatherization Goals

You can't improve what you don't measure, and per Public Act 11-80, the State of Connecticut has a legislated goal to weatherize 80% of homes by 2030.[16] Without an energy labeling requirement, there is no way to know whether this has been achieved. Combined with Public Act 08-98, The Global Warming Solutions Act,[17] that requires a 45% reduction in greenhouse gas emissions by 2030 and a 80% reduction by 2050. Energy labeling is a critical tool for achieving the goals that Connecticut has already codified into law.

[16] 2011, An act concerning the establishment of the department of energy and environmental protection and planning for connecticut's energy future, Public Act No. 11-80

[17] 2008, CT Global Warming Solutions Act, Public Act No. 08-98

Our Recommendations to Strengthen the Renter Energy Labeling legislation

The following is our wishlist of how renter energy labeling could better serve tenants to provide effective consumer protection.

- We strongly support the process to develop the labels, which would require public participation, alignment with standard labels already in use such as HERS and Energy Star, and would offer flexibility to the DEEP commissioner to determine what works best for CT.
- We support the requirement in the bill that landlords share the energy label on online rental listings, but we recommend that the burden to disclose the energy label should fall to the landlord – not on the tenant to request. Consider requiring disclosure upon receipt of rental application.
- We recommend eliminating the phasing in by energy burden.
    - Phasing in from a limited voluntary program into a mandatory program would make sense as a soft launch to work out any bugs to implementation and enforcement.
    - Because there are various methods to develop energy labels that don't rely on in-person energy audits, we do not need to phase in implementation as we scale up that workforce.
    - Phasing implementation by energy burden in the town's census tracts as the bill currently says may result in market inequities for tenants and landlords that operate in more than one town. (It is common for tenants to look for apartments in more than one town; and for building owners to own property in more than one town.)
- Recommend statewide implementation and enforcement
    - After a robust public participation process that develops a label useful for all the stakeholders, and simultaneously educates the public about the value of energy efficiency, building energy transparency should be implemented statewide instead of town by town.
    - We recommend a statewide enforcement approach, that may be augmented by towns; because CT is too small to implement these provisions 169 different ways. Statewide enforcement is preferred to ensure consumer protection of all CT Residents, and to not burden municipalities.
- Support the exemption for units that include utilities, since renters know those costs up front.
- Recommend eliminating exceptions for buildings built after 2000 and owner-occupied rentals - Exempting these buildings would make it harder for tenants to use the scores to make an informed decision about where to live.
- Recommend including a budget for initial and ongoing public education and outreach for effective implementation.
    - To streamline implementation and enforcement, tenants, property owners, and real estate professionals need to be educated about how to engage with this initiative.
    - The CT Green Building Council is happy to partner with DEEP and municipal enforcement agencies to help develop this training.

We strongly support renter energy transparency, and after its successful implementation in the State of Connecticut, we hope to see energy transparency for home sales proposed in the future. This energy transparency is critical consumer protection and a tool to encourage energy efficiency and reduce greenhouse gas emissions to meet the state's climate and weatherization goals.

Section 4: Municipal Stretch Code

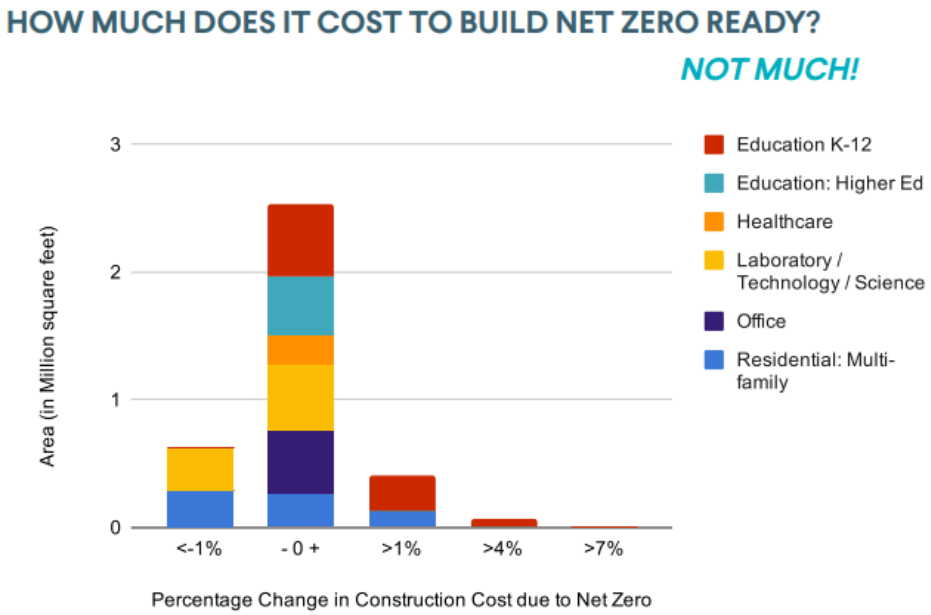
Building codes are one of the most effective ways to improve energy-efficiency

It is widely recognized that building codes are an important measure for scaling decarbonization.[18] In order to meet the state's climate mandates of reducing emissions by 45% by 2030, the built environment needs to be extensively transformed.[19] Allowing municipalities to increase efficiency standards for new construction and major renovations is a much needed first stride to reaching these climate goals. Indeed, without this stretch code, municipal and state officials are actually *prevented* from carrying out the state's mandates.

> ***"The only policy that's ever worked at scale in buildings is a strong building code."*** *Hal Harvey, Author of Designing Climate Solutions, A Policy Guide for Low Carbon Energy* [20]

Building Energy-Efficiency is Inexpensive—And Improves Energy Affordability

Improved energy codes have the potential to significantly benefit both economic development and economic justice in the state. While stretch codes in Connecticut have been held up previously because of concerns over affordability, an increasing number of studies have shown that zero energy development can not only be done at no additional cost, but any marginal increase in cost can be paid back in three years based on energy savings.[21] Publicly funded affordable housing in the state is already designed to be approximately 15% better than current codes for energy affordability and public health purposes, meaning that stretch codes will have no negative impact on either affordable housing development nor its public costs.[22]



Net Zero ready buildings are being built at the same cost as conventional buildings. 87% of net zero buildings reported have less than a 1% construction cost premium. This is consistent across all building types and sizes.[23]

[18] 2019, How do buildings contribute to climate change?, Curbed; 2020, Building Codes: A Powerful Yet Underused Climate Policy That Could Save Billions, Forbes

[19] 2008, CT Global Warming Solutions Act; 2018, An Act Concerning Climate Change Planning and Resilience

[20] 2019, Climate change policy can be overwhelming. Here's a guide to the policies that work., Vox

[21] 2017, Model Stretch Code Provisions for a 20% Performance Improvement in New Commercial Construction, New Buildings Institute

[22] 2020, TESTIMONY IN SUPPORT OF HB 5008: AN ACT CONCERNING THE ESTABLISHMENT OF HIGH PERFORMANCE GREEN BUILDING STANDARDS FOR VOLUNTARY ADOPTION BY MUNICIPALITIES, Seila Mosquera-Bruno, Commissioner, CT Department of Housing.

[23] 2021, Massachusetts is Ready for Net Zero, Built Environment Plus

Building Energy Efficiency is Long-Lived

The lifetime of the buildings being constructed now will extend beyond 2050, at which point we expect them to contribute no emissions. Building to zero energy standards now is a sound investment that will eliminate the need for expensive retrofits in the future. Short, if not immediate, paybacks in energy savings make these investments extremely economically attractive over the life of the building.

Stretch Codes are Demonstrated—And Necessary

Massachusetts has had stretch codes since 2009, which 82% of its municipalities have adopted.[24] Vermont has had a residential and commercial stretch code since 2013.[25] New York created a powerful climate-informed stretch code through NYSERDA, in direct response to the Governor's Climate Plan.[26] New Hampshire allows stretch codes, with enforcement designed around Compliance Collaboratives to increase adoption.[27] All of these have been successful demonstrations for climate targets, energy affordability, and economic development. The experience of our neighbors also reveals the importance of bringing environmental scientists and efficiency experts to the table.

Stretch Codes Better Keep Up with Industry Innovation and Market Realities

Allowing stretch codes is a critical procedural element for responding effectively to updates in the market as well as increasing amounts of targeted climate and economic vulnerability data. Base codes, like the International Energy Conservation Code (IECC) that Connecticut currently bases its energy code on, inevitably lag behind advances in technology and design practice.[28] The IECC code is updated on a three-year cycle, with states taking additional time to adopt each new iteration. We are thrilled that Connecticut is one of the first states to adopt the 2021 version of the IECC, but there is more that can be achieved by enacting a stretch code. Sustainability practitioners in the state have a wealth of experience designing, evaluating, and monitoring for much stricter standards set by the building industry. While base codes are not responsive enough to reflect fast growing technologies and expertise, stretch codes can be designed to meet this requirement. Not only can stretch codes better respond to market opportunities, but they can also respond more effectively to increasingly visible market failures. "Mapping Household Energy and Transportation Affordability in Connecticut", for example, revealed that energy burdens are 6-7 times higher among low-income households.[29] Distressed municipalities must be empowered to do what they can to serve their vulnerable constituents, including adopting stretch codes that save their residents money on electricity.

The Future of Connecticut's Stretch Code

While stretch codes are critical for reaching climate and economic development goals, they must be part of a broader effort to holistically center climate, safety, and development in codes and their processes. A municipal stretch code is an important first step that gives municipalities the ability to take charge and achieve their climate and energy justice goals. It is urgent that a stretch code be passed in Connecticut to keep up with its neighbors in economic development terms and meet its own state mandates in climate terms. As such, we recommend that DEEP and DAS develop more comprehensive options as enforcement, training, and procedures. Such efforts would be much benefitted by partnerships with experts in policy, enforcement, and building decarbonization from Connecticut and beyond, as there is a wealth of information and resources from local experts, think tanks,[30] and neighboring states[31].

[24] 2023, Massachusetts Building Energy Code, MASS.gov

[25] 2023, Vermont Building Energy Standards, Vermont.gov

[26] 2023, NYStretch Energy Code, NYSERDA

[27] 2012, Model Progressive Building Energy Codes Policy, Northeast Energy Efficiency Partnership (NEEP)

[28] 2016, Energy Codes And Standards, Whole Building Design Guide

[29] 2020, CT's Energy and Transportation Costs are Unaffordable for Many Households, Especially the Most Vulnerable, Operation Fuel

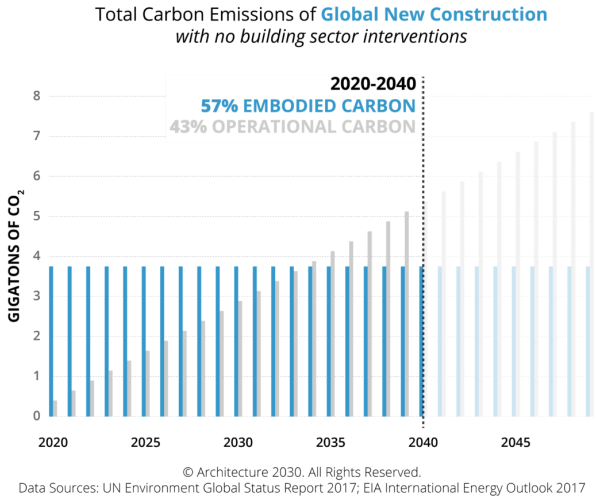
[30] 2021, NBI RELEASES CODE LANGUAGE THAT ACHIEVES CARBON NEUTRAL BUILDINGS, New Buildings Institute

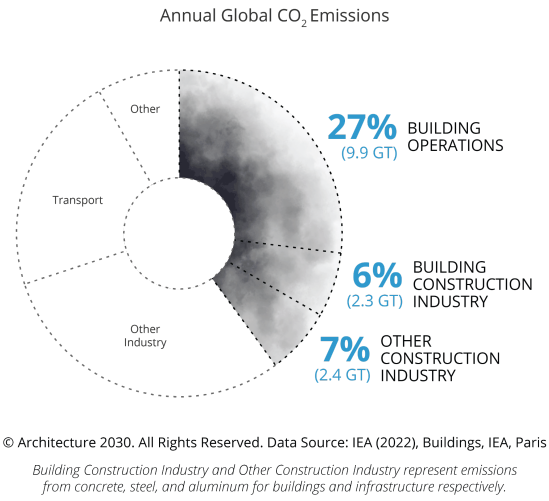
[31] 2020, NYStretch Energy Code, New York State Energy Research and Development Authority

Our Recommendations to Strengthen the Stretch Code

The following is our wishlist of how the stretch code could encourage high quality future-proof building infrastructure and also make it effective and adoptable.

1. **Use the same process as other CT State Building Codes** For the stretch code to be effective it is important to include a process for development, education, interpretation, and enforcement
    a. The development of a statewide stretch code should be managed by the Office of the State Building Inspector (OSBI) and the Codes and Standards Committee including opportunity for public comment.
    b. Include stakeholders such as building professionals, municipalities, and environmental advocates.
    c. A clear process should be provided for projects that request code modifications.
    d. Include a budget for education for contractors, architects, and other building professionals, training for local code officials, and enforcement.
2. **Prefer building electrification** and renewable thermal technologies.
    a. We need to transition away from fossil fuels to meet our climate goals, reduce pollution, and create a better quality of life for all CT residents.
    b. Create either a clear process for code modification for projects that have barriers to electrification or build in paths to use fossil fuels within the code that disincentive their use.
3. **Remove renewable energy as a requirement** This requirement will make it less adoptable, and we think the most important outcome of a stretch code is to optimize performance and efficiency so all or most annual energy consumption can be offset with renewable energy.
    a. A requirement for solar-ready infrastructure would be appropriate to avoid costly retrofits to add it in the future.
    b. Recommend an incentive for onsite renewable energy.
4. **Reduce embodied carbon.** (Embodied carbon accounts for a large percentage of building related greenhouse gas emissions. Only focusing on operational carbon is shortsighted if the goal of the stretch code is to reduce greenhouse gas emissions.)
    a. Require a Life Cycle Assessment using approved tools.
    b. Require one of the following
        i. % decrease in embodied carbon over baseline
        ii. Insulation and Structure each fall below a specified carbon/SF target.





Embodied carbon associated with building materials and construction accounts for 13% of GHG emissions globally, and will be responsible for more than half of total new construction emissions between now and 2040.[32]

[32] NEW BUILDINGS: EMBODIED CARBON, Architecture 2030

5. **Provide optimal ventilation**. Indoor air quality can be anywhere from 2-14 times more polluted than outdoor air, according to the EPA. Optimizing indoor air quality is incredibly important to manage human health. With the recent pandemic, understanding the connection between code and public health is more important than ever in order to prepare for potential future disruptions to our use of buildings.
    a. Require balanced ventilation with energy recovery (balanced ventilation prevents building pressurization which reduces the amount of air infiltration through the building envelope, increasing energy efficiency and indoor air quality)
    b. Require filtration equivalent to MERV 13 (This level of filtration filters out combustion and virus laden particles that are both harmful to human health)
    c. Require pandemic preparedness, ventilation to be able to be increased to a target ACH or CFM/occupant to reduce infection risk.
6. **Align measures with other State programs** Align stretch code measures with State affordable housing and energy-efficient incentive programs to streamline projects' ability to offset additional costs. The Stretch could be used as a compliance path for unlocking funding sources. Rhode Island's stretch code is structured this way.[33]
7. **Identify alternate compliance paths** such as Passive House, LEED Gold, or Living Building Certifications to streamline compliance and enforcement.
8. **Include municipal adoption incentives** - For instance, Massachusetts requires stretch code adoption for Green Community Designation that unlocks access to grant money.

Energy and Stretch Code Enforcement Recommendations

It is our determination that in order for this stretch energy code to be effective, there should be a concerted training initiative focused on educating local building officials on the code changes to assist with effective enforcement. Many building officials are stretched thin and understandably focused on enforcing life safety standards. We believe that energy-efficiency is a life safety standard, and should get the same amount of attention. We believe comprehensive training on the intent and provisions of the energy conservation code for building officials and inspectors will increase the quality of life for all CT residents. The CT Green Building Council is happy to partner with DEEP, DAS, and municipal enforcement agencies to help develop this training.

Sincerely,

Alicia Dolce

Alicia Dolce
Executive Director, CT Green Building Council

The CTGBC is a 501(c)(3) not-for-profit organization and an aligned chapter of the US Green Building Council (USGBC). We are committed to accelerating a healthy, equitable, resilient and sustainable transformation of Connecticut's built environment. Our membership includes developers, architects, engineers, consultants, building operators, builders and contractors, product manufacturers, public officials, and more. Several of our members volunteered to participate in the GC3 Working Groups to help Connecticut be a leader in developing policies and legislative actions that can reduce the negative impacts of climate change on our citizens.

[33] 2023, Rhode Island Stretch Codes, State of Rhode Island Office of Energy Resources